

## CHAPTER VII

### CONCLUSIONS AND RECOMMENDATIONS

In all of the three study sites, natural forest, teak plantation, and durian orchard, the total of 129 ant species were found which represent a high ant diversity in this area. As the species diversity indicated by Shannon-Wiener's species diversity index, the natural forest showed the highest diversity followed by the durian orchard and teak plantation. Although the ant diversity in the durian orchard was higher than in the teak plantation, the Sorensen's similarity coefficient indicated that the species composition in the teak plantation was more similar to the natural community than those in the durian orchard. It can be concluded that the habitat complexity of the natural forest provides resources for carrying high diversity of ant species more than those two anthropogenic habitats. In addition, the species composition found in the teak plantation, a low human management area, was more similar to the species composition in the natural forest than those in the durian orchard, an intensive human management area.

When the ant diversity was compared between seasons, only the forest site had higher ant diversity in dry season than in the wet season whereas the other two sites had higher ant diversity in the wet season than in the dry season. The similarity in the ant species composition between wet and dry seasons was highest in the durian orchard where the soil moisture was constantly controlled through irrigation throughout the year, whereas the similarities between seasons were low in other two habitats where the soil moisture was controlled through precipitation. This indicated that the variation in species composition between seasons could be influenced by human activities.

The abundances of many important ant species were very low in two anthropogenic habitats. However, the abundances of some species were high in these habitats. This also supported that human activity could interfere the abundance of some ant species.

The whole results of this research confirm the negative effect of land use management on the natural ant community. Some species were found in all three land

use types, while some specialized species were found only in specific microhabitats in the forest. If an understanding of microhabitats used by specific ant species can be developed, along with the key trophic interactions, then the potential of using ants as terrestrial indicator species for detecting environmental changes can be reliably and easily (low cost and time) performed comparing to some other indicator species.